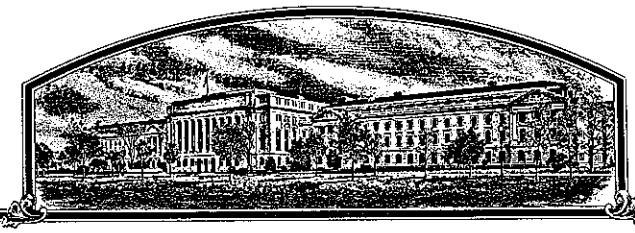
No. 8200171



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Texas Agricultural Experiment Station

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

ONION

'Texas Grano 1025Y'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington *this* 30th *day of* June *in the year of our Lord one thousand nine hundred and* eighty-three.

Attest:

Kenneth A. C...
Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

John R Block
Secretary of Agriculture

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: *See Reverse.*

FORM APPROVED
OMB NO. 40-R3822

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1a. TEMPORARY DESIGNATION OF VARIETY	1b. VARIETY NAME	FOR OFFICIAL USE ONLY
TX 036	Texas Grano 1025Y	PV NUMBER 8200171
2. KIND NAME: Onion	3. GENUS AND SPECIES NAME: Allium cepa L.	FILING DATE 9/7/82 — TIME 8:00 A.M. XXX
4. FAMILY NAME (BOTANICAL): Lilliaceae	5. DATE OF DETERMINATION: May 1982	FEE RECEIVED $ 500.00 $ 250.00 — DATE 9/7/82 6/1/83

6. NAME OF APPLICANT(S)	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*	8. TELEPHONE AREA CODE AND NUMBER
Texas Agricultural Experiment Station	Texas A&M University College Station, TX 77843	713/845-4051 713/845-4757

9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)*	10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION	11. DATE OF INCORPORATION
State Experiment Station	Texas	1876

12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS:

Send Policy, Release Committee
Foundation Seed Service
The Texas Agricultural Experiment Station
College Station , TX 77843

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- [X] 13A. Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
- [X] 13B. Exhibit B, Novelty Statement.
- [X] 13C. Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*
- [X] 13D. Exhibit D, Additional Description of the Variety.

14a. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a). (If "Yes," answer 14B and 14C below.)* [ ] YES [X] NO

14b. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?	14c. IF "YES," TO 14B, HOW MANY GENERATIONS OF PRODUCTION BEYOND BREEDER SEED?
[ ] YES [X] NO	[ ] FOUNDATION [ ] REGISTERED [ ] CERTIFIED

15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? [ ] YES [X] NO *(If "Yes," give name of countries and dates.)*

Protection will be filed in several countries in near future

9/9/82
12/2/82

15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? [ ] YES [X] NO *(If "Yes," give name of countries and dates.)*

16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? [X] YES [ ] NO

17. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

9-10-82
(DATE)

Harvey J. Walker
(SIGNATURE OF APPLICANT)

(DATE)

(SIGNATURE OF APPLICANT)

FORM GR-470 (1-78)

Exhibit A

Origin and Breeding History of the Variety

Texas Grano 1025Y

The onion variety, Texas Grano 1025Y, was developed from a cross between Texas Early Grano 502 X Ben Shemen in 1972. The TEG 502 had been developed jointly by the Texas Agricultural Experiment Station and the USDA and released in 1947. Ben Shemen was developed in Israel and was being grown in small commercial acreage in South Texas. The variety TG 1025Y pedigree is TEG 502 X Ben Shemen F_2M_4. The F_1 bulbs were selfed and selections were made as F_2 selections. F_2 selected bulbs were selfed and grown out as F_3 progeny rows in the pink root disease screening plot and then stored for 3 months. Several hundred F_3 progeny rows were observed and bulbs were selected from these lines exhibiting the most desired characteristics. Date of maturity was an important character since the objective was to develop a series of varieties which matured later than TEG 502.

Beginning with the F_3 progenies three generations were made using 3 to 5 bulb masses using identical looking bulbs from the progeny row which also matured on the same date. The fourth mass was a cage increase giving the pedigree $[(F_2M_3)M]$.

It was entered in variety and demonstration tests as TX 036. It exhibits resistance to pink root disease (Pyrenochaeta terrestris), produces high yields of uniform almost round yellow bulbs which maintain a very bright fresh appearance even after storage. It matures 10-15 days later than TEG 502, and exhibits good storage qualities. It has a mild flavor and is excellent for producing singles centers.

Leonard M. Pike and Paul Leeper, professors of Horticulture, provided leadership in development of the variety. Research Associates Tom Barkley

and Johnny Hobbs provided technical assistance. Onion producers and shippers grew out test plots and provided assistance in evaluations. The Texas Agricultural Experiment Station by virtue of employing the principle personnel, providing the major facilities, owning the original genetic stock and providing major financing of the onion breeding program is the owner of Texas Grano 1025Y.

Exhibit A - continued (Texas Grano 1025Y)

Texas Grano 1025Y is comparable to Ben Shemen and/or New Mexico Yellow Grano. For commercial purposes, however, it is distinctly different in shape, with much improved pinkroot resistance and storage quality. Yields from this variety are much improved when grown on pink root infested land. In addition, Texas Grano 1025Y has much better storage quality than New Mexico Yellow Grano.

Results from trials grown on the Texas A&M Research and Extension Center at Weslaco indicate that Texas Grano 1025Y is uniform and stable for essential characters such as shape, maturity, color, and quality. When compared to similar commercial types, Texas Grano 1025Y showed a much lower percentage of doubles and off types, which includes bulb color and shape which are not commercially acceptable. Grower trials in South Texas, Wintergarden area near Uvalde, Texas, West Texas near El Paso, and near Las Cruces, New Mexico also support these results. These results have been noted in simular trials for three generations. Table 1 is listed to demonstrate these findings.

Table 1: 1982 Onion Yield Trial Observations , Weslaco, Texas

	Color	% Double	% Off type	Remarks
Texas Grano 1025Y	Yellow	0.0	0.0	Uniform round
Ben Shemen	Yellow	4.3	4.3	4% White bulbs
New Mexico Yellow Grano	Yellow	5.9	1.6	White and/or pink bulbs present

Exhibit B (Revision 3-23-83) Texas Grano 1025Y

Texas Grano 1025Y is a yellow shortday onion variety developed from a cross between Texas Early Grano 502 x Ben Shemen. TG 1025Y is most similar in maturity to New Mexico Yellow Grano when compared to commercial varieties grown in short day onion production areas. It matures approximately 5-8 days earlier than New Mexico Yellow Grano. The second most similar commercial variety based on bulb maturity is Ben Shemen, however, it is approximately three weeks earlier than Ben Shemen and does not resemble Ben Shemen in foliage growth, foliage color, or bulb shape.

With reference to bulb characteristics, TG 1025Y is round in shape having a shape index of 1.0. The round bulb shape is unique among yellow shortday onion varieties. In comparison, Texas Grano is top shaped, Ben Shemen is tear drop shaped, and New Mexico Yellow Grano is somewhere between globe and top shaped.

With reference to leaf scale appearance, TG 1025Y has a bright fresh appearance even after storage while Texas Grano 502 becomes dull and Ben Shemen becomes dark brown with thick dry scales similar to longday, storage type onions.

With reference to disease resistance, Texas Grano 1025Y has good resistance to pink root disease. Ben Shemen and New Mexico Yellow Grano have little to no resistance to pink root. Texas Grano 502 has pink root resistance and was the source of resistance in the original cross.

Table 1 summarizes the novelty of Texas Grano 1025Y in comparison to the most similar shortday varieties of onions.

Table 1. A comparison of Texas Grano 1025Y with most similar shortday onion varieties.

Variety	Maturity	Bulb Shape	Leaf Scale	Pinkroot resistance
Texas Grano 1025Y	April 28-30	Round	Bright yellow	Good
New Mexico Yellow Grano	May 5-7	Top shape*	Medium yellow	None
Ben Shemen	May 20-25	Tear drop	Dark brown	None
Texas Grano 502	April 15-20	Top shape	Dull yellow	Good

*New Mexico Yellow Grano is classified as top shape but has been observed to be intermediate between top and globe when grown to large bulbs.

The unique differences of much importance for Texas Grano 1025Y is maturity date, round bulb shape, pink root resistance, and improved shipping and storage quality. Its maturity is important to extend production of shortday onions to provide a more orderly flow of fresh market onions to the consumer. Please refer to TAES MP 1514 for reasons for development of this variety and others which provide a means of improving an orderly flow of fresh onions to the market.

FORM APPROVED: OMB NO. 40-R3822

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Onions)

OBJECTIVE DESCRIPTION OF VARIETY

REFERENCES: See Reverse.

ONIONS (ALLIUM CEPA L.)

NAME OF APPLICANT(S)

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)

FOR OFFICIAL USE ONLY

PVPO NUMBER 8200171

VARIETY NAME OR TEMPORARY DESIGNATION

Texas Grano 1025Y

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. TYPE:

[1] 1 = BULB 2 = BUNCHING

[1] 1 = SHORT DAY 2 = LONG DAY

[2][4] TO [3][4] DEGREES MEAN LATITUTE - ADAPTATION RANGE

[3] Maturity (days): 1 = EARLY (75 - 90) 2 = MEDIUM (100 - 120) 3 = LATE (> 130)

2. PLANT

[6][5] CM. HEIGHT ABOVE SOIL LINE TO HIGHEST POINT OF ANY FOLIAGE

[ ][ ] CM. TALLER THAN _____ (Comparable variety)

[3][5] CM. SHORTER THAN TEG 502 (Comparable variety)

[2] 1 = ERECT (Spartan Gem) 2 = INTERMEDIATE 3 = FLOPPY (Epoch)

3. LEAF:

[5][0] CM. LONG (before maturity yellowing begins)

[1][6] MM. WIDE [1][0] MM. THICK AT MIDLENGTH OF LONGEST LEAF

[1] Color: 1 = LIGHT GREEN (Early Grano) 2 = MEDIUM GREEN (Yellow Bermuda) 3 = BLUE GREEN (Australian Brown U.C. No. 1)

[2] Bloom: 1 = NONE - glossy 2 = LIGHT (Early Grano) 3 = MEDIUM (Crystal Wax) 4 = HEAVY (California Early Red)

4. SHEATH:

[2][0] MM. COLUMN LENGTH (Height from soil line to base of lowest succulent leaf) [1][5] MM. DIAMETER AT MIDLENGTH

[9][2] Scape: CM. FROM SOIL LINE TO BASE OF INFLORESCENCE

[1][0] Scape: MM. DIAMETER AT MIDLENGTH

5. INFLORESCENCE:

Umbel (for seed production)

[9] MAXIMUM NO. PER PLANT [5] MINIMUM NO. PER PLANT [6] AVERAGE NO. PER PLANT

[7][5] MM. DIAMETER [1] 1. COMPACT 2 = LOOSE/OPEN 3 = SHAGGY

[2] Spathe: 1 = LONG BEAK 2 = SHORT BEAK [1] Flower Color: 1 = WHITE 2 = GREEN 3 = BRIGHT GREEN

[1] MM. ANTHER LENGTH

[3] Anther Color: 1 = LIGHT GREEN 2 = DARK GREEN 3 = YELLOW 4 = PALE YELLOW 5 = CHOCOLATE 6 = RED

[2] Pollen Viability: 1 = STERILE 2 = FERTILE [1] Sepal Shape: 1 = LONG POINTED 2 = ROUND SHORT

6. BULB:

[1][8] AVERAGE NUMBER BULBS PER METER

[3] Size (Harvest): 1 = SMALL (Red Creole) 2 = MEDIUM (Australian Brown U.C. No. 1) 3 = LARGE (Early Grano)

[1] Shape (see attached chart): 1 = GLOBE (White Sweet Spanish) 2 = DEEP GLOBE (Abundance)
3 = FLT. GLOBE (Australian Brn. U.C. No. 1) 4 = TOP SHAPE (Texas Grano 502)
5 = DEEP FLAT (Granex) 6 = THICK FLAT (Ebenezer)
7 = FLAT (Crystal Wax) 8 = TORPEDO-LONG OVAL (Italian Red)

[0][9] CM. HEIGHT ÷ [0][9] CM. DIAMETER = 1 SHAPE INDEX

[2] 1 = INVAGINATE 2 = EVAGINATE

[0][8] Color (Skin): 01 = BROWN (Australian Brn. U.C. No. 1) 02 = PURPLISH RED (Itanian Red)
03 = BUFF RED (Red Creole) 04 = PINKISH YELLOW (Ebenezer)
05 = BROWNISH YELLOW (Mt. Danvers) 06 = DEEP YELLOW (Brigham Yellow Globe)
07 = MEDIUM YELLOW (Early Yellow Globe) 08 = PALE YELLOW (Yellow Bermuda)
09 = WHITE (White Sweet Spanish) 10 = OTHER (Specify) _____

[4] Color (Interior): 1 = PINK 2 = RED 3 = PURPLISH-RED 4 = WHITE
5 = CREAM 6 = LIGHT GREEN-YELLOW 7 = DARK GREEN-YELLOW

[1] Scales: 1 = FEW (Crystal Wax) 2 = MEDIUM (Australian Brown U.C. No. 1) 3 = MANY (Sweet Spanish)

[3] Scales: 1 = THICK (Australian Brown U.C. No. 1) 2 = MEDIUM (Red Creole) 3 = THIN (Crystal Wax)

[4] Scale Retention: 1 = VERY GOOD (Australian Brn. U.S. No. 1) 2 = GOOD (Ebenezer)
3 = FAIR (Red Wethersfield) 4 = POOR (Crystal Wax)

[1] Pugence: 1 = MILD (Early Grano) 2 = MEDIUM (Crystal Wax) 3 = STRONG (White Creole)

[2] Storage: 1 = GOOD (Ebenezer) 2 = FAIR (Yellow Globe Danvers) 3 = POOR (Crystal Wax)

7. DISEASE RESISTANCE (0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[1] BLACK MOLD	[2] NECK ROT	[1] PURPLE BLOTCH	[0] SMUT
[0] MILDEW	[2] PINK ROOT	[0] SMUDGE	[0] YELLOW DWARF

8. INSECT RESISTANCE: (0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[1] THRIP [0] OTHER (Specify) _____

9. INDICATE A VARIETY THAT MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Leaf Height		Flower Ball	TEG 502
Leaf Color	Between TEG 502 & Ben Shemen	Bulb Color	TEG 502
Leaf Bloom/Wax	TEG 502	Bulb Size	TEG 502
Flower Stalk	Between TEG 502 & Ben Shemen	Bulb Shape	Sweet Spanish
Maturity at same Locantio	New Mexico Yellow Grano		

REFERENCES

Jones, H. A. and Mann, L. K. 1963 – Onions and Their Allies, Interscience Publishers, Inc., New York

USDA Misc. Pub. No. 435, 1941 – Descriptions of Types of Principal American Varieties of Onions

Hayward, H. E., 1938 – The Structure of Economic Plants, McMillan, New York (Reprint 1967)

Ag Research, 7 (8):8 – Feb. 1959 – Branding Onion Outcasts

Salem, I. A. 1966 – Inheritance of Onion Bulb Shape, Iowa St. University – PhD thesis

Exhibit D

Additional Description of the Variety

Texas Grano 1025Y

Texas Grano 1025Y is a yellow variety developed to extend the production season of short day onions in South Texas and other similar production areas. It matures 10-15 days later than TEG 502, thus extending the harvest season in South Texas. TG 1025Y was developed to provide a round onion shape, as engineers building a mechanical onion harvester determined that round onions were the optimum shape to handle with respect to trimming the foliage and roots from the bulbs.

Other important characteristics such as pink root resistance, improved storage and shipping quality were incorporated into this variety in addition to round shape and later maturity.

The yield potential is significantly higher than for TEG 502 because of its purity of color, high percentage of single centers, and resistance to pink root. Additionally, its 10-15 day later maturity puts it in a maturity date beyond TEG 502 and other short day varieties. The maturity date is similar to New Mexico Yellow Grano. TG 1025Y had produced yields four times as great as NMYG when grown on pink root infected soil and ships and stores much better.

The variety was selected from several breeding lines which originated from similar crosses between TEG 502 X Ben Shemen, by breeders Leonard Pike, Paul Leeper, and numerous onion growers in Texas and New Mexico. Its most unique characteristics include its round shape, bright fresh appearance and its maturity date. It can easily be distinguished from TEG 502 and other short day onion varieties.

TABLE 1. A COMPARISON OF DATES OF MATURITY OF TEXAS GRANO 502 AND FIVE NEW TAES VARIETIES.

	Maturity							
	April				May			
VARIETY	15	20	25	30	5	10	15	20
Texas Grano 502	X							
Texas Grano 1015Y	X							
Texas Grano 1025Y				X				
Texas Grano 1030Y						X		
Texas Grano 1105Y							X	

TABLE 2. A COMPARISON OF THE STORAGE - SHIPPING QUALITY OF COMMERCIAL ONION VARIETIES GROWN IN TEXAS TO THE NEW VARIETIES

	Storage-Shipping Quality					
	Weeks in Storage					
VARIETY	2-3	3-4	4-5	5-6	6-7	7-8
Granex	X					
Y33	X					
TE Grano 502		X				
Ringer		X				
New Mexico Yellow Grano	X					
Texas Grano 1015Y				X		
Texas Grano 1025Y					X	
Texas Grano 1030Y						X
Texas Grano 1105Y					X	